

METHOD AND APPARATUS FOR WIRELESS COMMUNICATIONS

ABSTRACT OF THE DISCLOSURE

A communication system (20) uses TDMA techniques to
5 distinguish intended recipients of a communication signal
(26) from one another, and direct sequence spread spectrum
(DSSS) techniques to encode and distinguish diverse parallel
substreams (70, 74) of each user's data stream. Parallel
unspread substreams (70) are spread using cyclic variations
10 of a common spreading code (38). In one embodiment, the
common spreading code (38) is chosen for low aperiodic
autocorrelation sidelobes and a substantially flat spectral
analysis. In another embodiment the common spreading code
15 (38) is chosen for low periodic autocorrelation sidelobes and
a substantially flat spectral analysis. In one embodiment,
the use of cyclic variations of the spreading code (38) along
with a cyclic prefix (114) enables the mathematical
communicative matrix multiplication property, thereby
permitting equalization for multipath to occur following or
20 in conjunction with despreading.

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